

Council Community Directories as a Source of Information about Local Health Services in Rural Australia

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Introduction

The pervasive impact of information technology has reached all levels of society. The use of computers and the internet has profoundly changed the way people access information with consumers increasingly turning to the internet to obtain information that they previously obtained elsewhere. In Australia it is estimated that over 2 million unique persons or 10% of the total Australian population accesses the Yellow Pages online per month (Roy Morgan Research, 2006). Home internet access is increasing at a rate of 5% per year and in 2006 an estimated 72% of Queenslanders had access to the internet from their homes (The Queensland Government Chief Information Office, 2006).

Health care service providers like many other businesses use the internet as an integral part of their strategy for the total provision for health. In the UK the White Paper "*The New NHS: A Modern Dependable*" identified the internet and digital TV as vehicles for the dissemination of health information (The Department of Health, 1997). Within Australia state health departments are developing extensive service provider databases. Four example, South Australia has developed the Human Services Finder (www.hsfinder.sa.gov.au/) which is advertised as "*the place to access information about health, housing, family and community services from the private, public and community sectors in South Australia*". A similar system is being developed in Queensland (www.health.qld.gov.au/13health/pdfs/faqs.pdf).

These web-based directories are designed in part to replace hard copy which is frequently out of date. However, health service providers express concern that state directories will not provide information at the local level (Eley and Baker, 2007). Instead local information may continue to be provided by alternative sources.

Many city and shire Councils have web-based local service directories that contain information about health services. These community information directories would appear to be an ideal location for detailed information about local health services. As stated in the foreword to Warwick Shire Council's community information directory "*service providers based in town have many services available to them, but often they are not well known or not accessible in a consolidated format. This directory may assist in increasing the awareness of these services and facilitate their access by service providers and users*" (<http://www.warwick.qld.gov.au/>).

The question remains as to whether these directories are utilised by the general public. To our knowledge, no surveys of town residents' use of Council directories for access to specific services have been undertaken. This study by the Centre for Rural and Remote Area Health (CRRH) provides the findings on awareness and use of community directories undertaken in four towns in southeast Queensland.

Study objectives

The objectives of the study were to determine:

- the general public's awareness of Council web directories;
- the general public's use of those directories for information about health services;
- other sources used by the general public for information about health services.

The project also evaluated the four community directories as to ease of access, and use and content. Recommendations were made as to improvement.

Methodology

Data source

Data were collected from four towns in Southern Queensland. All towns are inner regional as classified by the Australian Standard Geographical Classification (ASGC) based on physical remoteness from goods and services (Australian Bureau of Statistics, 2001) and as rural (between 3 and 5 on the 7 point scale) by the Rural, Remote, Metropolitan Areas Classification (RRMA) which combines size and remoteness (Department of Health and Ageing, 2006). Town populations are indicated as ranging

from 5000 to 12000.

Each town has its own community information directory (however named) which provides an extensive range of health service information. Indicated in Table 1 is the information provided for each health service provider in the directories.

Table 1 Information offered for each health provider in the on-line directories

	Town			
	A	B	C	D
Name	X	X	X	X
Description		X	X	
Postal address		X	X	
Webpage	Y	X	X	X
Phone	X	X	X	X
Fax		X	X	X
Email	Y	X	X	
Physical address	X	X	X	X
Contact person		X	X	
Position		X	X	
Opening hours		X	X	

X = provided for all services

Y = provided for services that pay for additional information to be entered

Two directories (Towns C and D) are Council developed and maintained, while a third (Town B) is generated from another business database run by the town's Chamber of Commerce. The fourth directory (Town D) is privately developed and maintained but endorsed by Council. The directory home web site is hyper-linked from the Council web site.

Survey instrument

A questionnaire was developed and refined following pilot testing with a group of people similar to the intended audience. The questions asked for the two demographic details of sex and age, followed by eight closed questions involving either yes/no (Q1-4), multiple selection from lists (Q5 and Q8) or single selection from a Likert Scale (Q6-7). Questions asked were:

1. Do you use the internet?
2. Are you aware of the existence of your town's Community Information directory?
3. Have you ever accessed a hard copy of the Community Information Directory to find out information about health services?
4. Have you ever accessed the Community Information Directory on the internet to find out information about health services?
5. How many times have you used the directory in last year for information about health services?
6. What information did you look for?
7. Did you find the information useful?
8. Did you find the information easy to use?
9. What sources of information do you use to find the health services you need

Data were collected during November/December 2006 by three different methods in each of the four towns.

- Mail survey: 1000 questionnaires were distributed to households in each town by a commercial distributor. Distribution was random within each town
- Clinic survey: Questionnaires were delivered to each of 21 waiting

rooms in doctors' surgeries (14), hospitals (2), physiotherapists (1), dentists (1) and radiology facilities (3)

- Personal interview: Two research staff undertook "cold intercept" in the streets of each town split over two consecutive days for a total of 12 hours per town. Pedestrians were approached and those who consented to participate were asked the same questions that appeared in the postal and clinic questionnaires

Directory review

All four town directories were reviewed by the two members of the research team and four other colleagues. Opinions were gathered on presentation of the directories on each web site, ease of access to the directories, categorisation of entries and the searching facilities. How comprehensive the entries in each directory were of health services in each town was determined by comparing to a list of health services collected from a number of alternative sources including telephone directories, databases of allied health professionals, other research project databases, word of mouth, professional organisation membership lists and internet searches.

Ethics

The study received ethics approval from the university Human Research Ethics Committee and all necessary permissions for collecting survey information on the streets were received from the police and the town Councils.

Data analysis

Data were coded, compiled, tabulated and analysed in accordance with the objectives of the study. Analyses were performed using SPSS v14. Descriptive statistics were used to describe the health information used and the selected characteristics of respondents. Chi-square (χ^2) and correlation tests were used to determine relationships between health information used and demographic information. The coefficient of contingencies was also calculated to measure the strength of association between the variables. A 0.05 level of probability with an accompanying 95% confidence level was used as the basis for measuring the level of significant relationship between the variables.

Results

Responses

Distribution of responses according to the method of data collection is presented in Table 2. The highest proportion (42%) of responses came from the mail survey and equal numbers (29%) from both the clinics and the street interviews. The response rate for the combined clinic and postal surveys was 13.0%.

Table 2 Distribution of respondents according to the method of data collection

Source	Number distributed	Number received	Percent of total responses
Mail	4000	467	42
Clinic	2100	326	29
Interview		432	29
Total		1125	100

Internet use

Sixty percent of the respondents in the study locations used the internet. The percentage of respondents who use internet services was the highest ($\chi^2 = 20.396$, $p < .0001$) in Town C (69.7%) and lowest in Town D (51.6%) (Table 3). The clinic respondents used internet services significantly more (68.0%; $\chi^2 = 16.299$, $p < .0001$) than those of mail (57.9%) and interviews (52.9%).

Table 3. Use of the internet by town

Town	Number Surveys returned	Response to question	Number who use internet	Percent who use internet
A	401	395	225	57
B	195	193	110	57

C	300	297	207	69.7
D	229	219	113	51.6
Total	1125	1104	655	59.3

Use of the internet was negatively correlated with age ($r = -.939$, $p < .05$). Over 83% respondents in the 18-24 age group used the internet as compared to fewer than 20% of the over 65 years of age group. There were no significant differences between males and females in the use of internet services by the different methods of data collection in any of the four locations ($\chi^2 = 4.92$, $p > .05$).

Table 4. Use of the internet by age

Age	Responses	Percent of total responses	Number who use internet	Percent who use internet
18-24	91	8.4	76	83.5
25-44	371	34.6	288	77.6
45-64	388	36.1	230	59.3
64	222	20.7	43	19.4
Total	1072	100	637	59.4

Awareness of information directory

Only the 655 people who use the internet were asked questions to determine whether respondents were aware of their own town or Shire Council's community information directory. Less than one-third (29.8%) of the respondents who used the internet were aware of their Council's information directory. There were no differences in awareness according to the method of data collection ($\chi^2 = 1.286$, $p > .05$) or to the sex of the respondents ($\chi^2 = .043$, $p > .05$).

However, there were town differences in awareness of the town directories. As shown in table 5 over 40% of the respondents from Town A who use the internet were aware of the directory as compared to 22-25% from the other towns (Table 5) ($\chi^2 = 19.060$, $p < .001$).

Table 5. Awareness of the town community information directories

Town	Number who use internet	Number aware of Council directory	Percent aware of Council directory
A	223	91	40.8
B	108	24	22.2
C	206	51	24.8
D	111	28	25.2
Total	648	194	29.9

Awareness of local directories was as high for the over 65 years (42.9%) of age as it was for those in the 18-24 years (40.8%) age group. Both these groups were over 10% higher than the other age groups ($\chi^2 = 8.877$, $p < .03$).

Use of directory

Of the 195 people with awareness of the Council directories 25.4% indicated that they had accessed the Council directory for the purposes of acquiring information about health services. Accessing the Council directory for health services did not differ among towns ($\chi^2 = 2.318$, $p > .05$) including Town D which had stressed the value of their directory for health service information. Overall the total access to the Council directories for health information was 7.2% of the 655 who use the internet and only 4.1%, or 1 in 25, of the total 1125 respondents.

The 47 people who had accessed their Council directory for information about health services were asked how often they had accessed the data base and for what information in the last year. The majority of respondents (66%) had accessed their Council directory between 1 and 4 times in the last year. Respondents had looked mainly for doctors followed by hospitals, community health clinics, dentists and podiatrists.

Other sources of health information

All 1125 respondents were given the opportunity to indicate where they find information about health services. The greatest source of health information was doctors or other health persons (81% of respondents) followed by phone directories, friends and family members (38-48%; Table 6). Internet searches were only used by one in ten people.

Table 6. Source of information use for health services

Source	Number	Percent
Doctor or other health person	910	80.9
Yellow/white pages	535	47.5
Friend/neighbour	503	44.7
Family member	433	38.4
Radio/TV	138	12.2
Internet search	121	10.7
Community newsletter	89	7.9
Council	58	5.1
Commonwealth Carelink	54	4.5
Other – go to hospital	17	1.5
Other – pharmacy	8	0.7

Respondents were able to select more than one category

Directory evaluation

Centre staff concluded that access to the directories from most Council home pages was not straightforward. Two of the four directories were not mentioned on the home page and were located within drop down menus labelled “*business*” and “*community*”. All four sites required at least four mouse clicks before any entries were displayed. With specific request to health, none of the sites had any mention of health on the Council home page.

The categories in which health services were listed are varied and considered to be somewhat confusing. The directory for Town A for example, offered 20 main categories including one named *Health and Lifestyle*. This category in turn contained another 20 sub categories. Although health service providers could be found in several of the sub categories of *Health and Lifestyle*, they were also scattered elsewhere appearing in sub categories within three other main categories of *Community*, *Government* and *Professional*. Finding a provider through the home page’s categories therefore involved some trail and error.

The third area reviewed was that of the search function within the directories. Directories tended to have searches linked only to the name of each entry. Thus many omissions occurred when searching for health services. For example, in one database entry of *physio*, *physiother* or *physiotherapy* all result in listing a provider named the Physiotherapy Centre. However, another provider names the Therapy Centre which also offered physiotherapy was not listed by this type of search as the word/part word *physiotherapy* was not in the title.

Furthermore searching was not considered by the reviewers to be intuitive. In one of the directories there was a full list of doctors listed in the sub category *Medical Practitioners* within the main category *Professional*. Given the other choice of *Health* as a main category in the database, *Professional* was not the place where one would intuitively look for doctors. Not one reviewer found this listing at the first or second attempt.

Finally the completeness of content was reviewed. This was highly variable from site to site. While two directories contained a range of private, public and community organisations the two others were limited to public and community organisations. However, in one of these directories the definition of community organisation has been extended to provide suppliers and includes medical practitioners, dentists, chemists, optometrists and other providers of private allied health. In the other directory no health professionals in the private sector were in the database.

Discussion

The data collected for this study is drawn from one region in southern Queensland; however, a brief search of the internet will reveal that similar community directories are offered by Councils in many parts of the world. As this method of information transfer is now common practice it is believed that the results will be of more general interest.

Response from the mail and clinic surveys was in the region of 15%. Concern is always expressed as to how representative results are of the population. However, the researchers are confident that the responses are representative as the data collected on the street from demographically similar people yielded similar results.

The low response rate suggests that interest in health is low. Only when support is needed is it sought. This only emphasises the fact that information about health services needs to be complete, easily accessed and in a format that is easy to use.

The overall 60% internet access figure is consistent with the Queensland Government figure for household internet access across the regions of southern Queensland (The Queensland Government Chief Information Office, 2006). This is 13% lower than in the metropolitan areas of Brisbane and the Gold Coast. The regional variation is highest for older people. The State average of 38% internet access for people over 65 drops to around 20% for the region which is consistent with that for four towns in this survey.

Although computer and internet access have been increasing every year, the age differential is an important consideration in the manner that information is presented. This is especially important in the area of health as elderly people are those who are most likely to make demands on the health services. Consideration should be made for Council community directories to be made available in print versions. Currently only Town C prepares a print version of their directory although the Town D data base may be printed off the internet.

Computer access and internet access are related to region, age, income, employment and level of education (The Queensland Government Chief Information Office, 2006). It was therefore not unexpected that use of the internet would be higher in Town C which is closest to Brisbane, has a higher employment rate, has the most cosmopolitan population, hosts a large regional university and other tertiary education institutions and has a competitive internet service provider market. Town D which had the lowest internet access has a relative socio-economic disadvantage when compared to the other three towns (Australian Bureau of Statistics, 2003) and a slightly older population (Office of Economic and Statistical Research, 2005).

Across all towns about a third of respondents were aware of their Council directories. Town A whose directory was privately produced, had the highest level of awareness. This directory is directly referred to and linked from the Council home page as a source of town information. Town C's directory is also listed on their home page as a "Community Directory". It would be interesting to determine if this latter terminology attracts further investigation by browsers to the site. The other two directories are only discovered through drop down menus and are not advertised on the Council home pages. An additional factor that may contribute to the level of awareness of the Town A directory is that it is run as a private business and contains entries from all sorts of commercial enterprises, who pay for their entries. The directory is thus a very comprehensive source of local information and is more likely to be accessed for other purposes than the directories that restrict entries to public and community organisations.

The level of awareness raises an important issue especially for those directories with the stated aim to provide health service information. Councils are likely to question if the directories are a good return on investment. However, perhaps a more relevant question is whether Councils can increase awareness with minimal extra work?

Even among people with awareness of the site the use of Council directories to access information about health services was very small. In the current study access to all computer sites for information about health services was 10.7%. Rural Queensland thus falls well behind the reported US figures of between 40 and 60% of on-line users accessing health information (Baker et al., 2003; Hesse et al., 2005; Miller and Reents, 1998).

The advantages of on-line databases are that they can be dynamic, reflecting the latest information. They offer the opportunity to provide up to date comprehensive details about the service such as hours of operation, cost, restrictions etc. However despite this technology the vast majority of our respondents still rely on age-old systems. As noted recently *the internet has not replaced the role of social ties in citizen information behaviour* (Pettigrew et al., 2002). In agreement with other reports, doctors in the 21st century are still the most important and trusted source of health information (Pennbridge et al., 1999; Rokade et al., 2002). Tradition alone will dictate that word of mouth and printed sources of information, most notably the phone directory, will continue to be used for years to come.

Pettigrew reported that barriers to using community information systems include factors having to do with technology, geography, economic circumstances, search skills, cognitive capacity, and may be psychological or information related (Pettigrew et al., 2002). All these barriers have the potential to affect the use of Council web-based directories. In comments that were offered, our study participants did not indicate that there were technological, geographic or economic barriers to internet use. Nor were knowledge (cognitive) or confidence (psychological) barriers a stated issue. An additional barrier could simply be one of personal choice. This is substantiated by a recent survey in

which the reason for Queenslanders not obtaining a computer or having internet access was stated to be "no need/not interested" by 64% of those people who didn't have a computer (The Queensland Government Chief Information Office, 2005).

During the course of this and other ongoing studies it has been discovered that sources of information about health services are fragmented and inconsistent in appearance and content. Notwithstanding the age effects related to access and choice noted above, it is suggested that Council directories may be the best source of complete local information especially in small rural towns. However, for community information directories to serve their intended function we believe that some changes are required.

Awareness of directories must be addressed and in particular location of the directories on the web sites could be improved. All of the directories in this study required four mouse clicks from the home page. It is our contention that such an important area as health should be highlighted on Council home pages and access to the database made directly through a tab.

Ideally directories should be standardised especially as they often are a source of information to town visitors. However while this may not be practical; other changes are. Directories should be made as simple as possible; simple to access, simple and intuitive to use and should offer simple instructions. A category for health should exist and contain all health services. If directories are found to be lacking in any of these areas then the audience may be lost. It is strongly recommended that directories are field-tested by the users and not just the developers. Internal trials by Centre staff would suggest that this has not been the case in the directories studied.

Search functions must be intuitive and complete. Consumers who identify omissions in searches easily lose confidence in the value of the database. In this study it was determined that directory search facilities require some familiarity with search techniques and knowledge of limitations to yield complete results. As none of the directories provide search instructions it is not clear to users what terms to use. For example in one directory, entry of the words *counsellor* and *counselling* yielded 1 and 6 entries, respectively. This inconsistency in results compromises the directory usefulness, especially for people who are not very conversant with searching.

In order for people to make a community directory their first port of call about local services they must be confident that the data is complete. Discussions with the directory developers revealed that the Councils do not include private organisations partially to keep costs down. They also believe they have no obligation to do so as part of their community service, as private providers have alternative means of advertising. They were unaware that in their own rural areas many private health professionals are subsidised by federal government programmes to provide public service and by definition should be included. The bottom line however, is that a directory that is not comprehensive has a much reduced value as a source of information about health services. Furthermore all encompassing local directories are likely to build a much larger consumer base of people who will by choice use that source of information as their first port of call for local information. It is our contention that health is such an important issue that all providers regardless of financial standing should be included.

The biggest challenge for any directory is to provide up to date details such that consumer confidence is maintained. Health service providers must recognise that their entries are important and that time spent updating information is as important as face to face contact with clients. How to achieve inclusion of all services and how to maintain up to date information will be challenges. One solution may be to offer password protected access for providers to update their own information.

Conclusion

Traditional sources of information about health services will continue to be very important especially for people who are reluctant or unable to embrace the new technologies. Despite this we would strongly endorse making community directories as the source of information about local health services. Major commitment will be required by Councils and by health providers. Our findings suggest a) more advertising is required to make people aware of the existence of community directories, b) resources about health should be prominent on the home page, c) all health and allied health professionals should be included in the directory in clear categories, d) directories need to be intuitive to use with clear instructions on use and searching.

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